

§ 27.1123

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(a) There must be means for thermal expansion of manifolds and pipes;

(b) There must be means to prevent local hot spots;

(c) Exhaust gases must discharge clear of the engine air intake, fuel system components, and drains;

(d) Each exhaust system part with a surface hot enough to ignite flammable fluids or vapors must be located or shielded so that leakage from any system carrying flammable fluids or vapors will not result in a fire caused by impingement of the fluids or vapors on any part of the exhaust system including shields for the exhaust system;

(e) Exhaust gases may not impair pilot vision at night due to glare;

(f) If significant traps exist, each turbine engine exhaust system must have drains discharging clear of the rotorcraft, in any normal ground and flight attitudes, to prevent fuel accumulation after the failure of an attempted engine start;

(g) Each exhaust heat exchanger must incorporate means to prevent blockage of the exhaust port after any internal heat exchanger failure.

(Secs. 313(a), 601, and 603, 72 Stat. 752, 775, 49 U.S.C. 1354(a), 1421, and 1423; sec. 6(c), 49 U.S.C. 1655(c))

[Doc. No. 5074, 29 FR 15695, Nov. 24, 1964 as amended by Amdt. 27–12, 42 FR 15045, Mar. 17, 1977]

§ 27.1123 Exhaust piping.

(a) Exhaust piping must be heat and corrosion resistant, and must have provisions to prevent failure due to expansion by operating temperatures.

(b) Exhaust piping must be supported to withstand any vibration and inertia loads to which it would be subjected in operations.

(c) Exhaust piping connected to components between which relative motion could exist must have provisions for flexibility.

[Amdt. 27–11, 41 FR 55470, Dec. 20, 1976]

POWERPLANT CONTROLS AND ACCESSORIES

§ 27.1141 Powerplant controls: general.

(a) Powerplant controls must be located and arranged under § 27.777 and marked under § 27.1555.

(b) Each flexible powerplant control must be approved.

(c) Each control must be able to maintain any set position without—

(1) Constant attention; or

(2) Tendency to creep due to control loads or vibration.

(d) Controls of powerplant valves required for safety must have—

(1) For manual valves, positive stops or in the case of fuel valves suitable index provisions, in the open and closed position; and

(2) For power-assisted valves, a means to indicate to the flight crew when the valve—

(i) Is in the fully open or fully closed position; or

(ii) Is moving between the fully open and fully closed position.

(e) For turbine engine powered rotorcraft, no single failure or malfunction, or probable combination thereof, in any powerplant control system may cause the failure of any powerplant function necessary for safety.

(Secs. 313(a), 601, and 603, 72 Stat. 752, 775, 49 U.S.C. 1354(a), 1421, and 1423; sec. 6(c), 49 U.S.C. 1655(c))

[Doc. No. 5074, 29 FR 15695, Nov. 24, 1964, as amended by Amdt. 27–12, 42 FR 15045, Mar. 17, 1977; Amdt. 27–23, 53 FR 34214, Sept. 2, 1988; Amdt. 27–33, 61 FR 21907, May 10, 1996]

§ 27.1143 Engine controls.

(a) There must be a separate power control for each engine.

(b) Power controls must be grouped and arranged to allow—

(1) Separate control of each engine; and

(2) Simultaneous control of all engines.

(c) Each power control must provide a positive and immediately responsive means of controlling its engine.

(d) If a power control incorporates a fuel shutoff feature, the control must have a means to prevent the inadvertent movement of the control into the shutoff position. The means must—

(1) Have a positive lock or stop at the idle position; and

(2) Require a separate and distinct operation to place the control in the shutoff position.

(e) For rotorcraft to be certificated for a 30-second OEI power rating, a